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Cotylea — Pericelidæ — is erected. The most abundant family is that of the Pseudoceridæ. Two species found in the Maldives occur also in the tropical Pacific and two species, *Leptoplana tremellaris* and *Thysanozoon brochii*, are widespread, occurring in north temperate as well as tropical seas.

Finally Gardiner himself has a paper on "Special observations and work relating to the formation and growth of coral reefs," still incomplete. He brings additional evidence, based on an increase in depth and extent in the lagoons since 1836, for believing that they are due to solution. The results of dredging at depths from 16 fathoms to 50 fathoms, show that the reef corals do not flourish luxuriantly below 25 fathoms, but there are other genera of corals which "flourish just beyond where the surface forms cease to exist." To test the rate of growth of reefs Gardiner studied the size of corals gathered from a channel that had been cleaned out three years before. He concludes that the reef grows at about the rate of 16 fathoms in 1000 years. He suggests that "if Falcon Island, erupted to a height of about 250 feet in 1885 and now a mere shoal, be cut down to 25 fathoms by the end of this century its place might well be marked by surface reefs, perhaps even by a perfect atoll, considerably before the year 3000 A. D." Finally the action of boring and sand-feeding organisms is discussed. The boring forms include algæ of the genus *Achyla*, *Cliona* and a Myxospongid, the mytilid *Lithodomus*, Sipunculoidea, a cirripede *Lithotrya* and, especially, the Polychætæ, above all the Eunicidæ. Of the sand feeding organisms the Holothuroidea, the Echinoids, the enteropneust Ptychodera, Sipunculus and *Thalassema* are important. All these organisms help in the dissolution of the coral rock by which the lagoons are made and kept open.

C. B. D.

A Book on the "Birds of the Rockies"¹ might be either a careful scientific hand-book of that region, or an introduction to popular bird study, or a pleasant account of ornithological rambles. The first Mr. Keyser's book does not of course claim to be; if it is to be judged, as the second or third, we must look for enthusiasm, for a certain amount of scientific training, and for literary skill. There is a wide field open to writers who have been trained in the school of Burroughs and Torrey, who can write introductions or invitations to popular bird study in the less well-known regions of this country.

¹ Keyser, L. S. *Birds of the Rockies*. 8vo, pp. 355. Chicago, A. C. McClurg & Co.

The visitor to Franconia or to Florida who is interested in birds takes Mr. Torrey's sketches as part of his outfit.

To serve as ornithological herald to Colorado was not perhaps Mr. Keyser's ambition; an enthusiast such as he needs no other incentive to write than the pleasure he feels in communicating his experiences. Mr. Keyser certainly has adequate enthusiasm. Such expressions as "rapture," "transports," occur so frequently that we question whether a more subtle expression of his delight would not be more likely to impress the reader. Our second desideratum, scientific training enough to wrest from a new region some fresh interesting matter is hardly shown in this book. The titles of some of the chapters, "Bald Peaks and Green Vales," "A Rocky Mountain Lake," "Ho! for Gray's Peak!" etc., show that it is rather a series of rambling sketches of the Colorado bird-landscape, so to speak, than a collection of serious studies.

When we come to the literary quality of the book the less said the better. It seems as if a book like this could justify its existence only by attaining a fairly high standard of literary excellence. This should not be hard in these days when Burroughs, Torrey, Muir and Roberts, to name but a few of the leaders, have furnished abundant models. Imagine any of these authors describing an indigo bird as an "animated chunk of blue," (page 154), saying that a woodpecker "has the habit of soaring out into the air and nabbing insects on the wing" (page 162), or writing of pipits that "their semi-musical calls drop and dribble from the turquoise depths of the sky" (page 239).

Of the plates by Mr. Fuertes, those in black and white exhibit that artist's well-known charm and vigor of drawing, but those in color are with one exception very disappointing. Why are the birds in one of Mr. Horsfall's charming little scenes (p. 139) called Brewer's Blackbirds, when three at least are Yellow-headed Blackbirds?

R. H.

Protozoa.—It is a full score of years since Kent's "*Manual of the Infusoria*" appeared and Butschli's monumental monograph of the Protozoa was begun. No comprehensive résumé of progress in protistology has appeared in the years that have since elapsed. This fact renders Calkin's¹ treatise peculiarly opportune and assures it a welcome from many readers.

Calkins, G. N. *Columbia Biological Series VI. The Protozoa.* Pp. xvi, 347. 153 Figs. New York, Macmillan & Co., 1901.